

Amendments to the Claims:

This listing of claims will replace all prior versions, and  
5 listings, of claims in the Application:

Listing of Claims:

1 1. (currently amended) : A flexible, hollow waveguide for  
2 transmitting radiation in visible and IR regions, comprising:  
3 (a) a hollow, flexible tube having a transparent annular  
4 body defining a bore with a smooth inner bore surface;  
5 (b) a reflective metal layer disposed upon the smooth  
6 inner bore surface; and  
7 (c) a composite of dielectric, sulfide-containing  
8 materials having a high refractive index ratio, said  
9 sulfide-containing materials disposed upon said  
10 reflective metal layer and forming a photonic, bandgap  
11 tube transmitting in the visible and IR regions.

1  
1 2. (original) : The waveguide in accordance with claim 1,  
2 wherein said hollow, flexible tube is composed of glass.

1 3. (original) : The waveguide in accordance with claim 1,  
2 wherein said hollow, flexible glass tube is composed of  
3 silica-glass.

1 4. (original) : The waveguide in accordance with claim 1,

2 wherein said composite of dielectric, sulfide-containing  
3 materials comprise disparate refractive indices of  
4 approximately 2:1.

1 5. (original): The waveguide in accordance with claim 4,  
2 wherein said metallic layer is selected from a group of metals  
3 consisting of: Ag, Au, Cu, Pt, Ni, Mb, Al, and combinations  
4 thereof.

1 6. (original): The waveguide in accordance with claim 1,  
2 further comprising:  
3 (d) an outer layer surrounding the hollow, flexible tube.

1 7. (original): The waveguide in accordance with claim 4,  
2 wherein the composite of sulfide-containing materials  
3 respectively comprise paired composite layers of cadmium and  
4 lead sulfide.

1 8. (currently amended): The waveguide of claim 8, 4, wherein  
2 said outer layer is composed of a material selected from a  
3 group of materials consisting of plastic, and silicone.

1 9. (original): A flexible, hollow waveguide, comprising:  
2 (a) a flexible, hollow tube having a transparent annular  
3 body defining a bore with a smooth inner bore  
4 surface;  
5 (b) a metallic layer disposed upon the smooth inner bore  
6 surface; and

7                   (c) a composite of dielectric materials disposed upon the  
8                   metallic layer featuring disparate refractive indices  
9                   with a ratio of approximately 2:1.

1       10. (original): The waveguide in accordance with claim 9,  
2       wherein said composite of dielectric materials respectively  
3       comprise two sulfide layers.

1       11. (original): The waveguide in accordance with claim 9,  
2       wherein said metallic layer is selected from a group of metals  
3       consisting of: Ag, Au, Cu, Pt, Ni, Mb, Al, and combinations  
4       thereof.

1       10. 12. (currently amended): The waveguide in accordance with  
2       claim 9, further comprising:  
3           (d) an outer layer surrounding the hollow flexible tube.

1       12. 13. (currently amended): The waveguide in accordance with  
2       claim 9, wherein the composite of dielectric materials form  
3       sulfide-containing layers.

1       13. 14. (currently amended): The waveguide in accordance with  
2       claim 9, wherein the composite of dielectric materials  
3       respectively comprise cadmium and lead sulfide.

1       14. 15. (currently amended): The waveguide in accordance with  
2       claim 11, wherein said outer layer is selected from a group of  
3       materials consisting of plastic, and silicone.

1    15. 16. (currently amended): A flexible, hollow  
2    waveguide for transmitting radiation in visible and IR  
3    regions, comprising:

- 4        (a) a hollow, flexible tube having a transparent annular  
5              body defining a bore with a smooth inner bore  
6              surface; and  
7        (b) a composite of dielectric, paired sulfide-containing  
8              materials having a high refractive index ratio, said  
9              sulfide-containing materials disposed upon said  
10          hollow tube, and forming a photonic, bandgap tube  
11          transmitting in the visible and IR regions.

1    16. 17. (currently amended): The waveguide in accordance with  
2    claim 15, 16, wherein said hollow, flexible tube is composed  
3    of glass.

1    17. 18. (currently amended): The waveguide in accordance with  
2    claim 15, 16, wherein said hollow, flexible glass tube is  
3    composed of silica-glass.

1    18- 19, (currently amended): The waveguide in accordance with  
2    claim 15, 16, wherein said composite of dielectric, sulfide-  
3    containing materials comprise disparate refractive indices of  
4    approximately 2:1.

1    19. 20. (currently amended): The waveguide in accordance  
2    with claim 18, 19, further comprising:

3 (d) an outer layer surrounding the hollow, flexible tube.

1 ~~20.~~ 21. (currently amended): The waveguide in accordance with  
2 claim ~~15,~~ 16, wherein the composite of sulfide-containing  
3 materials respectively comprise paired composite layers of  
4 cadmium and lead sulfide.

1 ~~21.~~ 22. (currently amended): The waveguide of claim ~~19,~~ 20,  
2 wherein said outer layer is composed of a material selected  
3 from a group of materials consisting of plastic, and silicone.

1 ~~22.~~ 23. (currently amended): A flexible, hollow waveguide,  
2 comprising:

- 3 (a) a flexible, hollow tube having a transparent  
4 annular body defining a bore with a smooth inner  
5 bore surface;
- 6 (b) a composite of dielectric materials disposed upon  
7 the smooth inner bore surface of said transparent  
8 annular body, featuring disparate refractive  
9 indices with a ratio of approximately 2:1.

1 ~~23.~~ 24. (currently amended): The waveguide in accordance with  
2 claim ~~22,~~ 23, wherein said composite of dielectric materials  
3 respectively comprise two sulfide layers.

1 ~~24-~~ 25. (currently amended): The waveguide in accordance with  
2 claim ~~22,~~ 23, further comprising:

- 3 (d) an outer layer surrounding the hollow flexible tube.

1       25. 26. (currently amended): The waveguide in accordance with  
2       claim 22, 23, wherein the composite of dielectric materials  
3       respectively comprise cadmium and lead sulfide.

1       26. 27. (currently amended): The waveguide in accordance with  
2       claim 24, 25, wherein said outer layer is selected from a  
3       group of materials consisting of plastic, and silicone.

1       27. 28. (currently amended): A method of fabricating a  
2       flexible, hollow waveguide using liquid phase deposition,  
3       comprising the steps of:  
4                 (a) Depositing a metallic layer on a smooth, inner bore  
5                         surface of a hollow, flexible, silica-glass tube;  
6                         and  
7                 (b) depositing at least one layer containing a sulfide  
8                         upon said metallic layer of step (a).

1       28. 29. (currently amended): The method in accordance with  
2       claim 27, 28, wherein two sulfide-containing layers, cadmium  
3       sulfide and lead sulfide, respectively, are deposited upon  
4       said metallic layer.

1       29. 30. (currently amended): The method in accordance with  
2       claim 27, 28, wherein a cadmium sulfide layer is deposited  
3       upon said metallic layer in accordance with step (b).

1    ~~30~~ 31. (currently amended): A method of fabricating a  
2    flexible, hollow waveguide using liquid phase deposition,  
3    comprising the steps of:

- 4                 (a) depositing at first layer of cadmium sulfide upon an  
5                 inner, smooth bore surface of a hollow silica-glass  
6                 tube; and  
7                 (b) depositing at least a second layer of lead sulfide  
8                 over said first layer of cadmium sulfide.

1    31. 32. (currently amended): The method in accordance with  
2    claim ~~30~~, 31, wherein multiple sulfide-containing layers of  
3    cadmium sulfide and lead sulfide, respectively, are stack  
4    deposited upon said inner, smooth bore of said hollow tube.